



# Functional Recovery Project

A new NIST & FEMA deliverable courtesy of PL 115-307

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# Background: Immediate Occupancy Report (2017-2018)

Congressional Assignment: *“current building codes often do not provide the necessary protection against natural hazards”*

NIST directed to identify: *“engineering principles”, “research”, and “implementation activities” needed for a new “**safety building performance objective for commercial and residential properties**”*

Stakeholder-driven process: steering committee & workshop with 80 subject matter experts from public and private sector

Vision:

*“Communities, owners, and residents would benefit from buildings that maintain structural integrity, a building envelope that is intact, and internal systems that continue to function after a natural hazard event, thereby avoiding lengthy and costly repairs or rebuilding, as well as the need for long term evacuation of building occupants.”*

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## Research Needs to Support Immediate Occupancy Building Performance Objective Following Natural Hazard Events

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# Background: A Topic of Interest

Accelerating interest in this topic from the policy, resilience, and engineering communities:

- Assemblymember Nazarian (CA)- legislation
- Structural Engineers Association of CA- working group
- International Code Council- discussions on FR topics
- Earthquake Engineering Research Institute:

*“FEMA and NIST are directed to convene a committee of experts to recommend options for improving the built environment and critical infrastructure needed to support community recovery and resilience. **This is expected to lead to the development of a new generation of functional recovery codes and standards for all components of the built environment.**”*





# Background- Recent Legislation in California

- 2018- CA Assembly Bill 1857
  - Would establish a working group to determine how a functional recovery building standard may be warranted and to advise appropriate state agencies on how to propose new building standards. Vetoed by Governor Brown who cited NIST SP1224.
- 2019- CA Assembly Bill 393
  - Would establish a working group to investigate the merit of using a functional recovery standard for earthquake design of buildings and to take into account the NEHRP functional recovery report to be completed by June 2020. Currently moving through committees in the CA assembly. Supported by SEAOC.

# Functional Recovery as Described in PL 115-307

(NEHRP Reauthorization- December 2018)

## Purpose:

*“assess and recommend options for improving the built environment and critical infrastructure to reflect performance goals, stated in terms of post-earthquake reoccupancy and functional recovery time”*

## Activities:

- Convene a *Committee of Experts* (due Dec. 1, 2019)
- Submit a report to Congress (due Jun. 30, 2020)



# Committee of Experts

The *Committee* established by NIST and FEMA shall include representatives from:

*“Federal agencies, nongovernmental organizations, private sector entities, disaster management professional associations, engineering professional associations, and professional construction and homebuilding industry associations”*



# Report Coverage

Per the reauthorization language, the report to Congress shall identify the “recommended options for improving the built environment and critical infrastructure” to allow faster post-earthquake reoccupancy and recovery of function.

NIST and FEMA interpret language to include:

- Both new and existing buildings and structures within the built environment,
- Both existing and new critical infrastructure, such as water, wastewater, power, transportation, and communication

# Challenges & Issues

- Creating a working definition of “functional recovery”
- Including both technical solutions and adoption mechanisms
- Defining both near and far-term efforts
- Considering buildings and critical infrastructure together



# Activities to Date

- Planning and Coordination discussions between NIST and FEMA
- Initial outreach to gather information about relevant ongoing work (SEAOC and EERI members)
- Draft process for project completion underway

Questions? Comments?

